

What is claimed is:

1. A storage medium storing a program used to direct a computer to perform optimization process
5 of the program, the process comprising:
 - extracting data items from the program;
 - laying out the data items in memory provided in the computer;
 - extracting defined but unused data items from
10 the extracted data items;
 - determining whether or not a plurality of data items forming at least a part of a data item having a hierarchical structure in the unused data items can be merged into a new data item based on the
15 layout result; and
 - outputting a program in which the plurality of data items are merged into the new data item based on the determination result.
- 20 2. The storage medium according to claim 1, , the process further comprising:
 - said plurality of unused data items to be merged are laid out in adjacent areas in the memory.
- 25 3. The storage medium according to claim 2, , the

process further comprising:

said plurality of unused data items to be merged are data items forming a part of another data item having a hierarchical structure, and
5 locating in an identical hierarchical level in the hierarchical structure.

4. The storage medium according to claim 1, , the process further comprising:

10 said plurality of unused data items to be merged are a data item having a hierarchical structure and a data item configuring the data item, and the data item having the hierarchical structure is configured by one data item.

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5. The storage medium according to claim 1, the process further comprising:

in the merge, deleting a code for declaration of a plurality of unused data items from the
20 program; and

adding code for declaration of a new data item.

6. The storage medium according to claim 5, the process further comprising:

25 setting an item length of the new data item

based on item lengths of the plurality of unused data items to be merged.

7. The storage medium according to claim 6, the
5 process further comprising:

when data types of a plurality of unused data items to be merged are all the same, setting a data type of the new data item to be the same as the data types of the plurality of unused data items to
10 be merged.

8. The storage medium according to claim 5, the process further comprising:

setting a data type of the new data item as
15 having a smallest storage area.

9. The storage medium according to claim 5, the process further comprising:

setting an item name of the new data item as
20 no name.

10. The storage medium according to claim 5, the process further comprising:

setting an item name of the new data item
25 based on any of the plurality of unused data items

to be merged.

11. The storage medium according to claim 1, the process further comprising:

5 changing a layout of the data item in the memory based on a changed program.

12. The storage medium according to claim 1, the process further comprising:

10 deleting code for definition of an unused data item from a changed program.

13. A program optimizing method for optimizing a program, comprising:

15 extracting data items from the program;
laying out the data items in memory provided in the computer;

extracting defined but unused data items from the extracted data items;

20 determining whether or not a plurality of data items forming at least a part of a data item having a hierarchical structure in the unused data items can be merged into a new data item based on the layout result; and

25 changing the program such that the plurality

of data items are merged into the new data item based on the determination result.

14. An optimizing apparatus for optimizing a
5 program, comprising:

a data item extraction unit extracting data items from the program;

a layout unit laying out the extracted data items in memory;

10 an unused data item extraction unit extracting defined but unused data items from the extracted data items;

a merge determination unit determining based on the layout result whether or not a plurality of
15 unused data items forming at least a part of a data item having a hierarchical structure in the unused data items can be merged into a new data item; and

a data item merge unit outputting the program in which the plurality of data items are merged
20 into the new data item.

15. An optimizing apparatus for optimizing a program, comprising:

data item extraction means for extracting data
25 items from the program;

layout means for laying out the extracted data items in memory;

unused data item extraction means for extracting defined but unused data items from the
5 extracted data items;

merge determination means for determining based on the layout result whether or not a plurality of unused data items forming at least a part of a data item having a hierarchical structure
10 in the unused data items can be merged into a new data item; and

data item merge means for outputting the program by which the plurality of data items are merged into the new data item.